

Application No. 09/996,603
Amendment dated December 30, 2005
Reply to Office Action dated September 9, 2005

REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. Claims 1-18 remain pending.

Applicant appreciates the Examiner's indication that dependent claims 9 and 18 include allowable subject matter.

However, claims 1-5 and 10-14 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,836,851 to Dive. Furthermore, claims 6-8 and 15-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Dive patent in view of published U.S. Patent Application No. 2002/0114303 to Crosbie et al. These rejections are respectfully traversed.

Specifically, Applicant respectfully submits that the Dive patent fails to teach or suggest a *wireless* communication network that is capable of determining a relationship between the timing of a local clock of a node with respect to the timing of a local clock of another node by exchanging the request and response messages in the specific manner as claimed. Furthermore, Applicant respectfully submits that the published Crosbie patent application fails to make up for the deficiencies in the teachings of the Dive patent to have rendered even the embodiments of the present invention as recited in independent claims 1 and 10 obvious.

The rejections will now be discussed in more detail.

As discussed throughout the present application, the claimed embodiments of the present invention provide a system and method for determining a relationship between the

Application No. 09/996,603

Amendment dated December 30, 2005

Reply to Office Action dated September 9, 2005

timing of a local clock of a node with respect to the timing of a local clock of at least one other node in a wireless communications network. As shown in Figure 3, for example, the system and method employ the operations of transmitting a clock information request message from the node to the other node at a request transmission time, and receiving at the node a response message from the other node at a response reception time. The response message including timing information pertaining to a request reception time at which the other node received the clock information request message and response transmission time at which the other node transmitted the response message. A difference between the timing of the local clock of the node and the local clock of the other node is then calculated based on the timing information, the request transmission time and the response reception time. These features are explicitly recited in independent claims 1 and 10.

The Dive patent teaches a two-step synchronization method for synchronizing two modules. Applicant notes that as described in column 5, lines 37-48 of the Dive patent, which includes a portion cited by the Examiner, the modules MOD1 and MOD2 *are electronic printed circuit boards of a computer system or of a telecommunication junction, such as a synchronous digital hierarchy cross connect, and are interconnected via a bus (i.e., a wired connection)*. Hence, Applicant respectfully submits that it is unreasonable to interpret the modules MOD1 and MOD2 as nodes in a *wireless* communication network. This difference alone is sufficient for the claims of the present application to avoid anticipation by the Dive patent.

Application No. 09/996,603
Amendment dated December 30, 2005
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In addition, Applicant respectfully submits that the modules MOD1 and MOD2 fail to perform the request and response message exchange as specifically recited in independent claims 1 and 10 of the present application. For example, the Examiner contends that the clock signal TS1 recited in column 6, lines 6-10 of the Dive patent corresponds to the claimed "clock information request message." Applicant respectfully submits, however, that nowhere does the Dive patent teach or suggest that the signal TS1 is used to *request* any information from MOD2. Rather, upon receiving the signal TS1, MOD2 "synchronizes its clock generator GEN2 with the clock signal TS1." That is, MOD2 is not requested by signal TS1 to provide information to MOD1, but rather, simply uses the clock signal TS1 to synchronize its own clock generator GEN2.

In addition, the Examiner contends that column 6, lines 10-18 of the Dive patent teaches that the module MOD2 transmits a clock signal TS2DEL that corresponds to the "response message" as recited in the claims of the present application. Applicant respectfully submits that the Dive patent fails to teach or suggest that the clock signal TS2DEL is transmitted as a "response" message in response to a "request message." Again, the clock signal TS1 is not *requesting* any information from MOD2.

Furthermore, nowhere does the Dive patent teach or suggest that the clock signal TS2DEL includes "timing information pertaining to a request reception time at which the other node received the clock information request message and response transmission time at which the other node transmitted the response message" as explicitly claimed. Rather, column 6, lines 15-16 merely teach that the clock signal TS2DEL "has a phase difference with respect to the clock signal TS1." In other words, the clock signal TS2DEL does not

Application No. 09/996,603

Amendment dated December 30, 2005

Reply to Office Action dated September 9, 2005

include the specific timing information that the claimed "response message" includes, but rather, simply inherently has a phase difference from clock signal TS1. Column 6, lines 19-21 of the Dive patent explains that it is the responsibility of MOD1 that receives the clock signal TS2DEL to determine the time difference value DIF1 between the clock signal TS1 and clock signal TS2DEL. Again, nowhere does the Dive patent teach or suggest that the clock signal TS2DEL is a response *message* that includes the specific information as recited in the claims of the present application, it is simply a clock signal that MOD1 needs to compare to its own clock signal TS1 in order to ascertain a time difference value DIF1. Accordingly, MOD1 also fails to perform the "calculating" operation as recited in the claims, since MOD1 does not calculate a difference between the timing of its local clock and the local clock of the other module MOD2 based on timing information *included in the response message*, as well as the request *transmission* time and the response *reception* time.

For all these reasons, Applicant respectfully submits that the Dive patent fails to anticipate the embodiments of the present invention even as recited in independent claims 1 and 10.

Concerning dependent claims 2-5 and 11-14 which are rejected based on the Dive patent, Applicant respectfully submits that the Dive patent fails to teach or suggest that module MOD1, for example, calculates a propagation time based on the *timing information* included in the response message as recited in claims 2 and 11. As demonstrated above, the TS2DEL clock signal that the Examiner interprets as the claimed "response message" does not include any such timing information. Applicant also respectfully submits that the Dive patent fails to teach or suggest the specifics in which the request transmission time and

Application No. 09/996,603
Amendment dated December 30, 2005
Reply to Office Action dated September 9, 2005

response transmission time are indicated as recited in dependent claims 3 and 12. Applicant also further submits that as discussed above, the clock signals TS1 and TS2DEL transmitted by MOD1 and MOD2 are not "request" and "response" messages. Applicant further respectfully submits that since the Dive patent fails to teach or suggest the operations recited in independent claims 1 and 10 as performed for one other node, the Dive patent fails to teach or suggest performing these operations for a plurality of other nodes as recited in claims 4 and 13, as well as calculating the respective timing differences between the clocks of the other nodes as recited in dependent claims 5 and 14.

Hence, the Examiner is respectfully requested to withdraw the rejection based on the Dive patent alone.

Concerning the rejection of claims 6-8 and 15-17 based on the Dive patent in combination with the published Crosbie patent application, Applicant respectfully submits that the published Crosbie patent application teaches a system and method for clock synchronization across wireless networks. Applicant therefore submits that one skilled in the art would not have been motivated to modify the *wired* modules MOD1 and MOD2 according to the teachings of a wireless network according to the published Crosbie patent application. Furthermore, nowhere does the published Crosbie patent application teach or suggest the exchange of the request and response messages as specifically recited in independent claims 1 and 10 of the present application.

Accordingly, Applicant respectfully submits that it would not have been obvious or possible for one skilled in the art to have modified the system taught by the Dive patent in

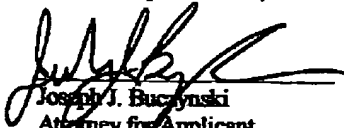
Application No. 09/996,603
Amendment dated December 30, 2005
Reply to Office Action dated September 9, 2005

accordance with the teachings of the published Crosbie patent application to have achieved the embodiments of the present invention even as recited in independent claims 1 and 10. Hence, all claims should be allowable.

Finally, Applicant notes that minor editorial amendments are being made to dependent claims 6 and 15 to clarify that the network is a multihopping network as described throughout the present application.

In view of the above, it is believed that the subject application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully submitted,


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Application No. 09/996,603
Amendment dated December 30, 2005
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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this AMENDMENT (along with any documents referred to as being attached or enclosed) is being facsimile transmitted to the U.S. Patent & Trademark Office, Attention Examiner: Nguyen Hoang Ngo, Art Unit 2663, Facsimile Number 571-273-8300, on the date shown below:

Dated: Dec. 30, 2005


Lois A. Borlase

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